

### MOTOR VEHICLE AND MOTORCYCLE RELATED TRAUMA AMONG ELDERLY POPULATION

This report summarizes traffic and non-traffic related motor vehicle (MV) and motorcycle (MC) related trauma among the Elderly population ( $\geq 65$  years old). Arizona Department of Health Services State Trauma Registry 2010 data were used to measure the impact of MV/MC related trauma among the Elderly.

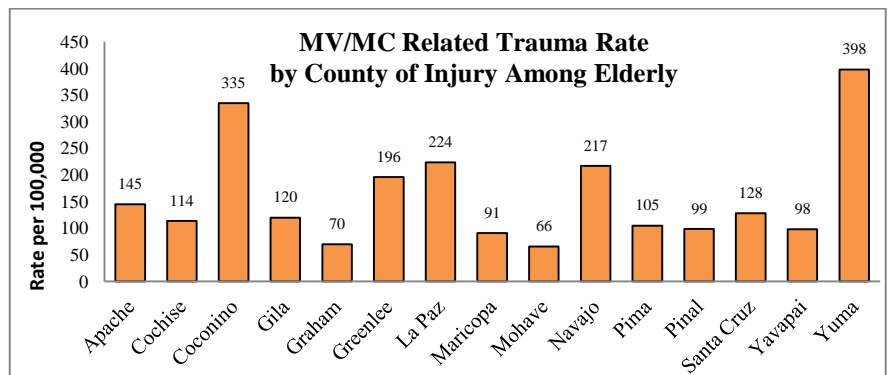
**Table 1: Demographics**

Demographics	Elderly Drivers ( $\geq 65$ years old)	
	Frequency	Percent
<b>Occupant</b>		
Auto Driver	650	63.5%
Auto Passenger	282	27.6%
Motorcycle Driver	86	8.4%
Motorcycle Passenger	5	0.5%
<b>Race - Ethnicity</b>		
Hispanic	134	13.4%
White Non-Hispanic	811	81.2%
American Indian or Alaska Native	20	2%
Black or African American	26	2.6%
Asian Pacific Islander	8	0.8%

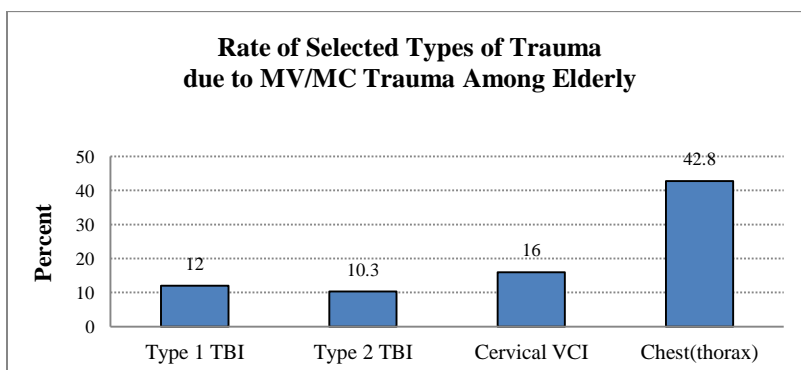
Table 1 shows the Demographics of Elderly individuals involved in MV/MC related trauma. There were a total of 1,023 MV/MC related traumas among Elderly during 2010, of which 932 were MV related trauma and 91 were MC related trauma. Seventy-two percent (72%) were drivers of either MV or MC and 28% were passengers. White non-Hispanic elderly had the highest MV/MC related trauma as compared to other race/ethnicity.

**Graph 1: MV/MC Related Trauma Rate by County of injury among Elderly per 100,000 Persons**

Graph 1 shows the number of Elderly injured in MV/MC related trauma per 100,000 persons by county. Note that the county with the highest rate of Elderly injured is Yuma with a total of 398 per 100,000 persons, followed by Coconino County with 335 per 100,000. Mohave County has the lowest rate of Elderly injured in MV/MC related trauma at 66 per 100,000 persons.



**Graph 2: Rate of Selected Types of Trauma due to MV/MC Trauma among Elderly**

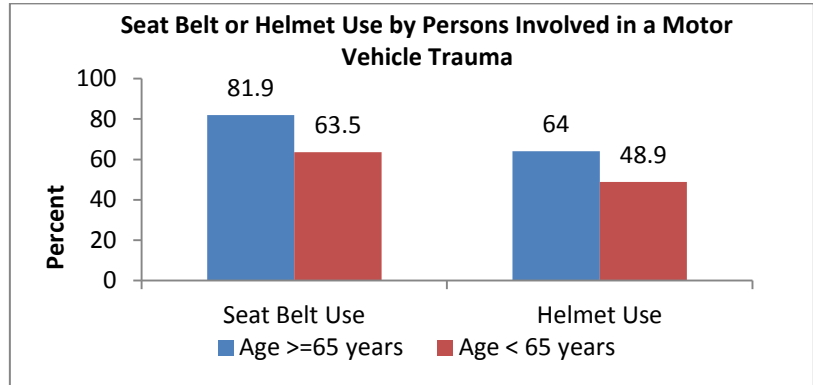


Graph 2 shows that more than 40% of Elderly suffered chest injury due to MV/MC related trauma. Twelve percent (12%) suffered a Type I Traumatic Brain Injury (TBI) and 10% suffered a Type II TBI.\* Sixteen percent (16%) suffered cervical spine non-spinal cord involved Vertebral Column Injuries (VCI).

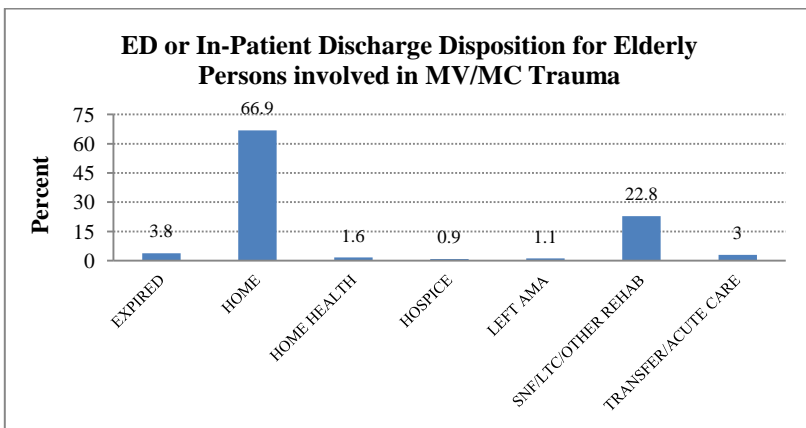
**Graph 3: Seat Belt or Helmet Use among Elderly involved in MV/MC Related Trauma**

Graph 3 compares percent helmet and seat belt use between Elderly persons with persons under age 65 for calendar year 2010.

The data show that 82% of Elderly involved in MV trauma used a seat belt, while 64% of Elderly involved in MC trauma used a helmet. With respect to persons under age 65, 63.5% involved in MV trauma used a seat belt and 49% involved in MC trauma used a helmet.



**Graph 4: Emergency Department (ED) or In-Patient Discharge Disposition**



Graph 4 shows that four percent (4%) of Elderly involved in MV/MC related trauma died, 1.6% were discharged to Home Health, and 23% were discharged to a Skilled Nursing Facility (SNF) /Long Term Care (LTC)/Other Rehab Facility. MV/MC trauma caused higher mortality among Elderly (a two-fold increase) as compared to persons under age 65 (1.8%, not shown in the graph).

**Table 2: Total Charges and Reimbursement by Discharge Status**

Table 2 demonstrates that overall, MC trauma had higher median charges (\$47,931) than MV trauma (\$29,859) among Elderly. Median charges among Elderly persons discharged home due to MV trauma were \$20,616, while the median charges among Elderly discharged to Home Health or Hospice or SNF/LTC/Other Rehab or Died were \$81,107 (a four-fold increase).

Similar results were observed in MC trauma. Median charges among Elderly involved in MC trauma and discharged home were \$35,313, while the median charges among Elderly discharged to places other than home or died were \$118,515 (a three-fold increase).

Financial Characteristics Elderly Persons (>= 65 yrs)	All Discharges	Discharged Home	Not Discharged Home
<b>Motor Vehicle Occupant</b>			
Total Charges	\$53,347,861	\$18,485,848	\$34,862,013
Median Charges	\$29,859	\$20,616	\$81,107
<b>Motorcycle Occupant</b>			
Total Charges	\$8,130,911	\$2,432,720	\$5,698,191
Median Charges	\$47,931	\$35,313	\$118,515

\* TBI Type I “Injuries with a recorded evidence of an intracranial injury or a moderate or prolonged loss of consciousness (LOC).”  
TBI Type II “Injuries with no recorded evidence of intracranial injury and LOC of less than one hour; LOC of unknown duration or unspecified level of consciousness.”

#### **ADDITIONAL RESOURCES:**

Governor’s Office of Highway Safety (<http://www.azgohs.gov/>)

Arizona Motor Vehicle Crash Facts 2010 (<http://www.azdot.gov/mvd/Statistics/crash/PDF/10crashfacts.pdf>)

Arizona Department of Health Services (<http://www.azdhs.gov/index.htm>)

Bureau of Emergency Medical Services and Trauma System (<http://www.azdhs.gov/bems/index.htm>)